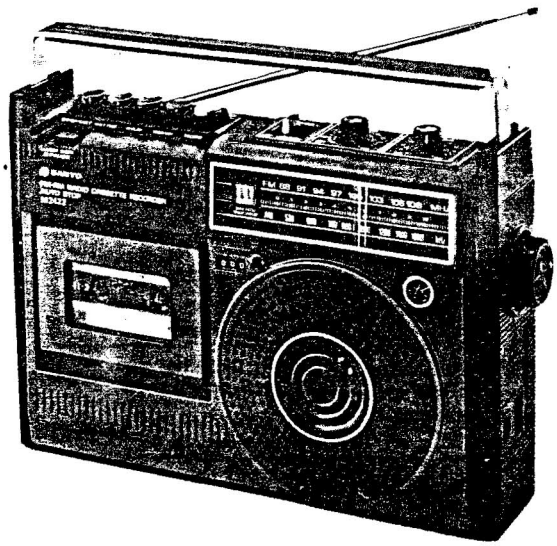
SANYO

SANYO
PORTABLE RADIO
CASSETTE RECORDER
M 2422F/M 2422H
SERVICE MANUAL



›ECIFICATIONS

.PE RECORDER SECTION

:cording system:	AC bias, double track
. rasing system:	DC erase
Tape speed:	1-7/8 ips. (4.75cm/sec.)
Recording time:	60 min. (C-60 cassette)
Rewind & Fast forward time:	90 sec. (C-60 cassette)
Frequency response:	50 ~ 10,000Hz
Wow & Flutter:	0.3% RMS
Signal to noise ratio:	40 dB
Input:	EXT MIC: 680 ohm
	AUX: 220K ohm
Output:	EXT SP: 8 ohm

RADIO TUNER SECTION

Frequency range:	MW: 530 ~ 1,605kHz
	FM: 88 ~ 108MHz (M2422F)
	SW1: 2.3 ~ 7.3MHz (M2422H)
	SW2: 7.3 ~ 22MHz (M2422H)

GENERAL

Output power:	2.2W maximum
Power source:	DC: 6V (UM-1 x 4)
	AC: 120/200/240V
Speaker:	4-3/4" (12cm) P.D.S.
Dimensions:	8-5/16"(H) x 4-1/32"(D) x 13-7/32"(W)
	(211 x 102 x 335mm)
Weight:	6 lbs. approx.

ADJUSTMENT OF PINCH ROLLER

1. Set the unit to the PLAY mode.
2. Apply a tension gauge to the pinch roller. Read the gauge at the precise moment when the pinch roller separates from the capstan.
3. If the gauge reading is within a range of 450 - 650 g, no adjustment is necessary. If otherwise, make adjustment by changing the force of the spring coil. (See exploded view No. 21)

TORQUE ADJUSTMENT

1. Set the unit to the PLAY, FAST FORWARD or REWIND mode.
2. Measure the each torque with a torque gauge. They should be as following;

PLAY	30 - 60 g/cm
FAST FORWARD	60 - 130 g/cm/cm
REWIND	60 - 130 g/cm/cm

3. If the each torque fails to reach the standard value. Clean the drive belt, flywheel, motor pulley, take-up reel, idler and rewind roller with a cotton swab soaked in alcohol.

ADJUSTMENT OF HEAD AZIMUTH

1. Connect the unit to a power source and insert a test cassette tape (7K Hz pre-recorded) in the cassette compartment.
2. Connect an 8 ohm dummy load with the VTVM across it to the EXT. SP jack on the unit.
3. Set the unit into the PLAY mode and turn the tone control knob untill maximum.
4. Turn the head azimuth adjusting screw until the maximum valu with reading on the VTVM.
5. Fasten the adjusting screw securely by applying paint or glue.

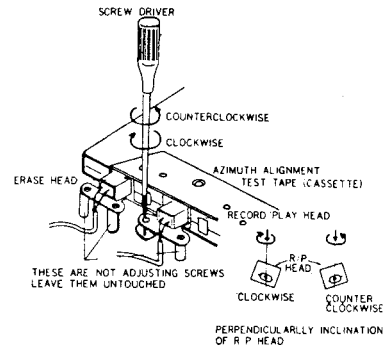


Fig. 2

TUNER ADJUSTMENT

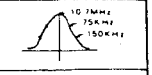
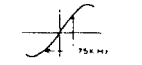
AW ADJUSTMENT (M2422F & M2422H)

Step	Adjusting Circuit	Connections		SG frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	I. F. T.	Connect sweep generator to test loop.	Connect oscilloscope to EXT. SP terminals.	455 KHz (400 Hz 30% modulation)	Low end of dial scale. At position of no unrequired signal.	T305 ~ T307 (M2422F) T301 ~ T303 (M2422H)	MAX.
2	O. S. C.	Connect AM SG to test loop.	Connect VTVM to speaker terminals.	505 KHz (400 Hz 30% modulation)	Low end of dial scale.	L108	MAX.
3				1650 KHz (400 Hz 30% modulation)	High end of dial scale	VCT-4 (M2422F) CT-2 (M2422H)	
4	AERIAL	Connect AM SG to test loop.	Connect VTVM to speaker terminals.	600 KHz (400 Hz 30% modulation)	600 KHz on dial scale	L107 (M2422F) L103a (M2422H)	MAX.
5				1400 KHz (400 Hz 30% modulation)	1400 KHz on dial scale	VCT-3 (M2422F) VCT-1 (M2422H)	
6	Repeat adjustments.						

PREPARE: 1. Variable Capacitore completely closed.
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, AM SG, VTVM and oscilloscope.
4. Selector switch to "AM".
5. Use a screwdriver with plastic grip for all adjustments.

TUNER ADJUSTMENT

FM ADJUSTMENT (M2422F)

Step	Adjusting Circuit	Connections		SG frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	I. F.	Connect sweep generator to FM aerial Terminal	Connect oscilloscope to test point TP3, TP5	10.7 MHz (non modulation)	Near max. capacity of VC. at position with no unrequired signal.	T101, T301 T302, T303	
2	Ratio Det.		Connect oscilloscope to test point TP4, TP5			T304	
3	O. S. C.	Connect FM SG. to FM aerial Terminals.	Connect VTVM to speaker terminal.	87 MHz (400 Hz 30% modulation)	Low end of dial scale	L106	MAX.
4				109 MHz (400 Hz 30% modulation)	High end of dial scale	VCT-2	
5	AERIAL	Connect FM SG. to FM aerial Terminals.	Connect VTVM to speaker terminal.	90 MHz (400 Hz 30% modulation)	90 MHz on dial scale	L104	MAX.
6				106 MHz (400 Hz 30% modulation)	106 MHz on dial scale	VCT-1	
7	Repeat adjustments.						

PREPARE: 1. Variable Capacitors completely closed.
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, FM SG, VTVM and oscilloscope. FM antenna input impedance is 75 ohm.
4. Use a screwdriver with plastic grip for all adjustments.

SW1 ADJUSTMENT (M2422H)

Step	Adjusting Circuit	Connections		SG frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	O.S.C.	Connect AM SG. to aerial terminal through IRE dummy.	Connect VTVM to EXT. SP. terminals.	2.2 MHz (400 Hz 30% modulation)	Low end of dial scale.	L107	MAX.
2				7.6 MHz (400 Hz 30% modulation)	High end of dial scale.	VCT-4	
3	AERIAL	Connect AM SG. to aerial terminal through IRE dummy.	Connect VTVM to EXT. SP terminals.	2.5 MHz (400 Hz 30% modulation)	2.5 MHz on dial scale.	L103b	MAX.
4				6.5 MHz (400 Hz 30% modulation)	6.5 MHz on dial scale.	VCT-2	
5	Repeat adjustments.						

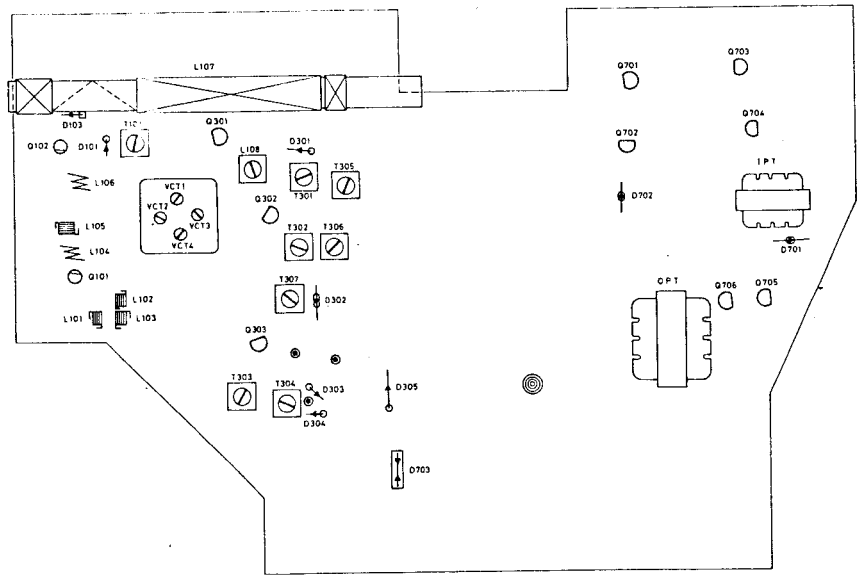
PREPARE: 1. Variable capacitor completely closed.
2. Set the dial pointer to very left line of dial scale.
3. Connect signal generator to dummy aerial.
4. Use a screwdriver with plastic glip for all adjustments.
5. Selector switch to "SW1"

SW2 ADJUSTMENT (M2422H)

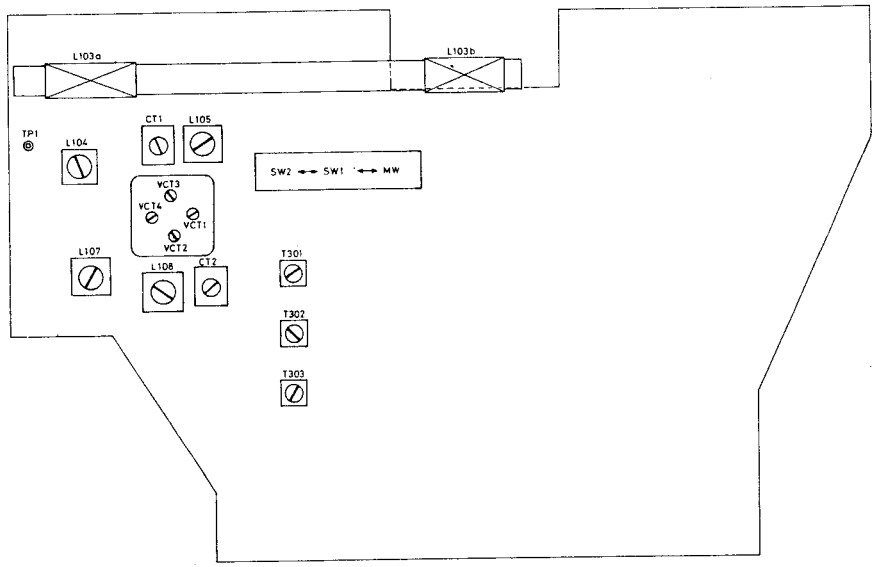
Step	Adjusting Circuit	Connections		SG frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	O.S.C.	Connect AM SG. to aerial terminal through IRE dummy.	Connect VTVM to EXT. SP. terminale	7.0 MHz (400 Hz 30% modulation)	Low end of dial scale.	L105	MAX.
2				22.7 MHz (400 Hz 30% modulation)	High end of dial scale.	CT-1	
3	AERIAL	Connect AM SG. to aerial terminal through IRE dummy.	Connect VTVM to EXT. SP. Terminals.	8 MHz (400 Hz 30% modulation)	8 MHz on dial scale.	L104	MAX.
4				21 MHz (400 Hz) 30% modulation)	21 MHz on dial scale.	VCT-3	
5	Repeat adjustments.						

PREPARE: 1. Variable capacitor completely closed.
2. Set the dial pointer to very left line of dial scale.
3. Connect signal generator to dummy aerial.
4. Use a screwdriver with plastic glip for all adjustments.
5. Selector switch to "SW2".

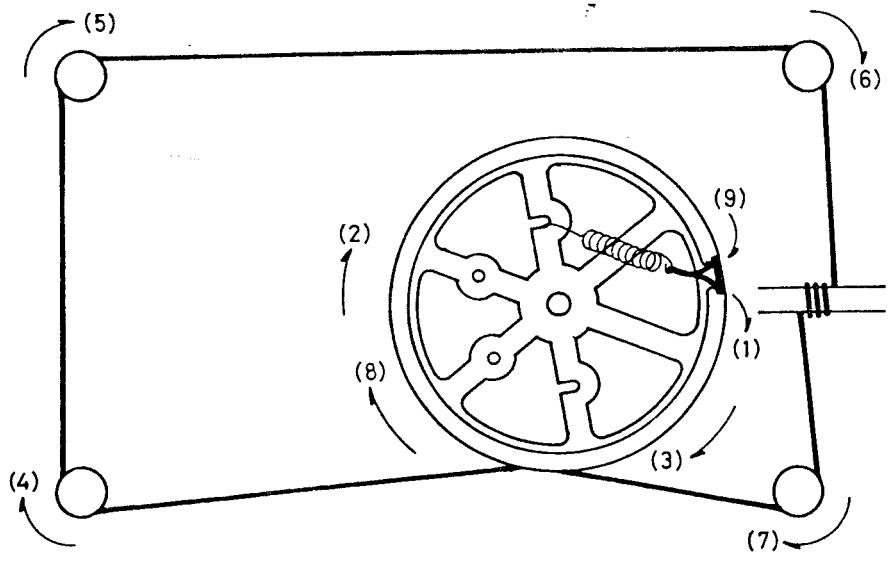
ADJUSTMENT POINT (M2422F)



ADJUSTMENT POINT (M2422H)



DIAL CORD STRINGING



PARTS LIST

Key No.	Part No.	Description	Q'ty
PACKING			
	141-6-132T-60700	Individual carton (M2422F)	1
	141-6-132T-60701	Individual carton (M2422H)	1
	141-6-144T-24500	Styrol filler	2
	141-6-415T-08001	Notice	1
	123-6-453R-00100	Inspection sheet	2
	141-6-411T-67400	Instruction booklet	1
	141-6-472T-05603	Caution label, Voltage 240V	1
		Polyethylene bag 320 x 500mm, Set	1
		Polyethylene bag 150 x 250mm, Inst. book	1
ACCESSORIES			
	4-241T-04971 4-241T-10873 or 4-241T-11100	Cassette tape, Demo tape C-12	1
	4-243T-76401	Power supply cord	1
CABINET			
	141-0-111T-25091	Cabinet assembly (M2422F)	1
	141-0-111T-250911	Cabinet assembly (M2422H)	1
	141-0-124T-11991	Cassette comp lid assembly	1
	141-0-126T-15891	Back lid assembly (M2422F)	1
	141-0-126T-158911	Back lid assembly (M2422H)	1
	141-0-128T-08491	Battery comp. lid assembly	1
	141-2-372T-01901	Bracket, SP mtg.	3
	141-2-858T-05100	Bracket, Cassette lid spring mtg.	1
	141-2-852T-23100	Wire spring, Cassette lid mtg.	1
	141-2-751T-53900	Shaft, Cassette lid fulcrum	1
	123-2-472R-11100	Lug, Rod antenna	1
	141-2-132T-03800	Sign window, Voltage select switch	1
	141-0-163T-09300	Rotary knob assembly, VR TONE	2
	141-2-163T-27500	Rotary knob, Tuning	1
	141-2-162T-08800	Lever knob, Band select (M2422F only)	1
	141-2-161T-25300	Push button, PAUSE	1
	141-2-163T-28900	Rotary knob, Fine tuning (M2422H only)	1
		Sheet 9 x 16mm, Tuning knob (M2422H only)	1
CHASSIS			
	141-2-361T-10600	Bracket, VR mtg.	1
	141-2-367T-27000	Bracket, Input-Output socket	1
	141-2-367T-26700	Bracket, DC socket mtg.	1
	141-2-741T-73900	Lever, Band select (M2422F)	1
	141-0-741T-746911	Lever assembly, Band select (M2422H)	1
	123-2-472R-00600	Lug, Lead retainer	1
	141-2-851T-06300	Coil spring, Dial rope	1
	141-0-311T-19691	Chassis assembly (M2422F)	1
	141-0-311T-196911	Chassis assembly (M2422H)	1
	141-2-146T-05900	Dial scale (M2422F)	1
	141-2-146T-05902	Dial scale (M2422H)	1
	141-2-511T-06000	Pointer	1
		Dial rope 950mm	1
	141-0-566T-02300	Tuning shaft assembly	1
	141-2-385T-01301	Bracket, Inner microphone mtg.	1
	141-2-425T-00200	Hexagon screw, Drum mtg.	1
	141-2-538T-02800	Drum, Dial	1
	123-2-415R-10100	Hexagon nut 9mm, Tuning shaft	1
	141-2-852T-29600	Wire spring, R/P select	1
		Cushion 7 x 7 x 5mm	1
		Steel ball 1/8", Band select	2
		Felt 7 x 10 x 4mm, Remote socket to Socket base	1
		Felt 30 x 30 x 4mm, P.C.B. to SP	1
		Adhesive sheet 5mm, Mechanism to chassis	1
	141-2-751T-87600	Shaft, Medley switch	1
	141-2-851T-89200	Coil spring, Medley switch	1
		Felt 15 x 15 x 4mm, OPT mtg.	1
		Adhesive sheet 5mm, Pointer	1
	123-2-472R-00400	Lug, Bracket volume earth	1
	141-2-465T-11700	Stopper lever assembly (M2422F only)	1
		Ethylene washer 4 x 12 x 0,5mm (M2422F only)	1

Key No.	Part No.	Description	Q'ty
CHASSIS			
	141-2-747T-10100	Bracket, Band select (M2422F only)	1
	141-2-851T-86800	Coil spring, Band select (M2422F only)	1
		Felt 15 x 15 x 12mm ANT coil-P.C.B. (M2422F only)	1
		Felt 15 x 15 x 7mm, Mechanism-chassis (M2422F only)	1
	141-2-731T-35300	Slide, Band select (M2422H only)	1
	141-2-683T-26500	Ring (M2422H only)	1
	141-2-421T-15700	Special screw, Band select (M2422H only)	2
	141-2-464T-17100	Fixer, lever (M2422H only)	1
	141-0-741T-745911	Lever assembly, Radio-OFF-Sleep (M2422H only)	1
		Sheet 4.5 x 26mm, Lever (M2422H only)	2
	141-2-747T-10400	Bracket lever (M2422H only)	1
	141-2-851T-61800	Coil spring (M2422H only)	1
SCREW MOUNTING			
		Pan head screw 2 x 6mm	2
		Pan head screw 2.6 x 12mm	2
		Flat head screw 2 x 6mm	2
		Tapping screw 2.3 x 8mm	1
		Tapping screw 3 x 8mm	6
		Tapping screw 3 x 10mm	2
		Tapping screw 3 x 12mm	2
		Tapping screw 3 x 14mm	2
		Tapping screw 3 x 15mm	1
		Tapping screw 3 x 25mm	2
		Tapping screw 3 x 30mm	5
		Washer 3mm	1
		Spring washer 3mm	1
		External tooth lock washer 3mm	1
		Fiber washer 3.3 x 8 x 0.5mm	1
		Pan head screw with washer & spring washer 3 x 6mm	1
		Tapping screw with washer 3 x 8mm	4
		Tapping screw with washer 3 x 10mm	4
ELECTRICAL PARTS			
	4-151T-18600	Speaker 12cm 8 ohm	1
	4-251T-43400 4-251T-43900 or	Power transformer 120/200/240V	1
	4-153T-07971	Microphone	1
	4-231T-19200	Switch, Monitor Hi-Lo-OFF	1
	4-231T-49200	Switch, Radio/Tape	1
	4-235T-12100	Socket, Car battery	1
	4-511T-03000	Meter	1
	4-235T-26800	Socket, AC input	1
	141-2-135T-32200	Cover, AC input	1
	4-235R-16200	Socket, AC select	1
	4-236T-01391 4-235T-14600 or	Plug assembly Socket, AC select	1 1
	4-236T-03891	Plug assembly	1
	4-244T-01100	Rod antenna	1
	123-2-382R-00600	Terminal, Rod antenna connect	1
P.C.B. ASSY (M2422F)			
	4-226T-71991	Printed circuit board assembly	1
		AMP	
S2-1,S2-6	4-231T-44371	Switch, Tape-AM-FM select	1
	4-254T-03400	Output transformer	1
	4-254T-10900	Input transformer	1
	4-235T-05500	Socket, MIC AUX EXT. SP	3
	4-235R-15771	Socket, Remote	1
	123-2-474R-00200	Chip plug	2
	123-2-411R-10900	Plate nut, Remote	1
	4-231T-21972 4-231T-28400	or Switch, R/P select	1
S8	4-231R-14900	Switch, Beat SW	1
	4-258T-07100	OSC coil	1
	4-252T-04700	Choke coil 100μH	1
	123-2-472R-00400	Lug, VR earth	1
VR701	4-222T-40900	Variable resistor 10KA, VOLUME	1

PARTS LIST

Key No.	Part No.	Description	Q'ty
P.C.B. ASSY (M2422F)			
VR702	4-222T-40800 or	Variable resistor 10KA with SW, TONE	1
VR701	4-222T-46500	Variable resistor 10KA, VOLUME	1
VR702	4-222T-46600	Variable resistor 10KA with SW, TONE	1
Q701		Transistor 2SC644	1
Q702,703, 704		Transistor 2SC945	3
Q705,706		Transistor 2SD400	2
Q707		Transistor 2SB187	1
D701,702		Diode MA-26	2
D703		Diode DS-131	1
D704		Diode DS-132	1
		CAPACITORS	
C707,708		Electrolytic 0.1μF 10V	2
C701		Electrolytic 0.15μF 10V	1
C702		Electrolytic 0.22μF 10V	1
C706		Electrolytic 0.33μF 10V	1
C710,731		Electrolytic 0.47μF 10V	2
C703,709		Electrolytic 1μF 25V	2
C735		Electrolytic 2.2μF 25V	1
C728		Electrolytic 33μF 25V, Low temperature	1
C704,717		Electrolytic 220μF 6.3V	2
C718		Electrolytic 220μF 10V	1
C712		Electrolytic 470μF 6.3V	1
C713		Electrolytic 470μF 10V	1
C719		Electrolytic 1000μF 10V	1
C726		Mylar 0.0033μF ±20% 50V	1
C714,715		Mylar 0.015μF ±20% 50V	2
C727		Mylar 0.022μF ±20% 50V	1
C736		Mylar 0.033μF ±20% 50V	1
C730		Ceramic 150pF ±20% 50V	1
C705		Ceramic 220pF ±20% 50V	1
C734		Ceramic 390pF ±20% 50V	1
C723		Ceramic 470pF ±20% 50V	1
C711		Ceramic 0.001μF ±20% 50V	1
C725		Ceramic 0.0015μF ±10% 50V	1
C720,721, 737,738		Ceramic 0.022μF +80 −20% 50V	4
		RESISTORS	
R724		Winding wire 0.22 ohm ±10% 1/2W	1
R718		Carbon 3.3 ohm ±10% 1/4W	1
R726		Carbon or Solid 8.2 ohm ±10% 1/2W	1
R737		Carbon 10 ohm ±10% 1/4W	1
R723		Carbon 33 ohm ±10% 1/4W	1
R738		Carbon 180 ohm ±10% 1/4W	1
R742		Carbon 220 ohm ±10% 1/4W	1
R741		Carbon 620 ohm ±10% 1/4W	1
R736		Carbon 6.8K ohm ±10% 1/4W	1
R715		Carbon 33K ohm ±10% 1/4W	1
R739		Carbon 220K ohm ±10% 1/4W	1
R713		Carbon 680K ohm ±10% 1/4W	1
R705		Carbon 1.5M ohm ±10% 1/4W	1
		TUNER	
L107	4-257T-11801	Antenna coil assembly	1
	4-224R-08371	Variable capacitor	1
	123-2-445R-00200	Rubber cushion, VC mtg.	1
L101,102, 105	4-265R-05000	VHF coil	3
L103	4-265R-12800	VHF coil	1
L104	4-265R-10500	VHF coil	1
L106	4-265R-11700	VHF coil	1
L108	4-258T-08130	OSC coil	1
T101	4-256R-20830	IFT, FM	1
T301,302	4-256R-19530	IFT, FM	2
T303	4-256R-15130	IFT, FM	1
T304	4-256R-02330	IFT, FM	1
T305,306	4-256R-00130	IFT, AM	2
T307	4-256R-00230	IFT, AM	1
	141-2-322T-20900	Shield plate, IFT	1
TP3	123-2-382R-00200	Terminal	1
		Pan head screw 2.6 x 4mm, VC mtg.	2

Key No.	Part No.	Description	Q'ty
P.C.B. ASSY (M2422F)			
TP1,2	123-2-474R-00200	Chip plug	1
Q101		Transistor 2SC930, RF	1
Q102		Transistor 2SC930, Conv.	1
Q301,302		Transistor 2SC710	2
Q303		Transistor 2SC710	1
D101,301, 303,304		Diode 1S188 FM	4
D103		Diode 1S553	1
D302		Diode 1S188 AM	1
D305		Diode 1S330 A1	1
		CAPACITORS	
C323		Electrolytic 0.1μF 6.3WV	1
C318		Electrolytic 4.7μF 6.3WV	1
C305		Electrolytic 10μF 6.3WV	1
C324		Electrolytic 470μF 6.3WV	1
C120		Styrol 120pF ±5% 120WV	1
C119		Mylar 0.0022μF ±10% 50WV	1
C311		Mylar 0.0033μF ±20% 50WV	1
C302,315, 316		Mylar 0.01μF ±20% 50WV	3
C306,314, 322		Mylar 0.022μF ±20% 50WV	3
C321		Mylar 0.018μF ±20% 50WV	1
C327		Mylar 0.039μF ±20% 50WV	1
C309		Ceramic 1pF ±0.25pF 50WV	1
C307,312, 313,127		Ceramic 2pF ±0.25pF 50WV	4
C108		Ceramic 3pF ±0.25pF 50WV	1
C111		Ceramic 4pF ±0.5pF 50WV	1
C103		Ceramic 5pF ±0.5pF 50WV	1
C125		Ceramic 6pF ±0.5pF 50WV	1
C101		Ceramic 10pF ±10% 50WV	1
C113		Ceramic 13pF ±10% 50WV	1
C102,107		Ceramic 20pF ±10% 50WV	2
C104,109, 317		Ceramic 30pF ±10% 50WV	3
C325		Ceramic 150pF ±10% 50WV	1
C301		Ceramic 200pF ±5% 50WV	1
C326,331		Ceramic 200pF ±10% 50WV	2
C124,126		Ceramic 300pF ±5% 50WV	2
C110		Ceramic 500pF ±10% 50WV	1
C329,330		Ceramic 500pF ±10% 50WV	2
C319,320		Ceramic 0.001μF +80 −20% 50WV	2
C105,106, 112,114, 118		Ceramic 0.01μF +80 −20% 50WV	5
C115,117, 121,123, 303,308, 310		Ceramic 0.022μF +80 −20% 50WV	7
C328		Ceramic 0.1μF ±20% 25 or 12WV	1
		RESISTORS	
R103,301, 305		Carbon 33 ohm ±10% 1/4W	3
R332		Carbon 22 ohm ±10% 1/4W	1
R324		Carbon 39 ohm ±10% 1/4W	1
R312		Carbon 56 ohm ±10% 1/4W	1
R109		Carbon 68 ohm ±10% 1/4W	1
R107		Carbon 100 ohm ±10% 1/4W	1
R106,307		Carbon 150 ohm ±10% 1/4W	2
R111		Carbon 220 ohm ±10% 1/4W	1
R316		Carbon 270 ohm ±10% 1/4W	1
R317,318		Carbon 1K ohm ±10% 1/4W	2
R325		Carbon 2.2K ohm ±10% 1/4W	1
R323		Carbon 3.3K ohm ±10% 1/4W	1
R319,320, 333		Carbon 5.6K ohm ±10% 1/4W	3
R102		Carbon 150K ohm ±10% 1/4W	1
R302		Carbon 470K ohm ±10% 1/4W	1
R327		Carbon 220K ohm ±10% 1/4W	1
R329		Carbon 560K ohm ±10% 1/4W	1

PARTS LIST

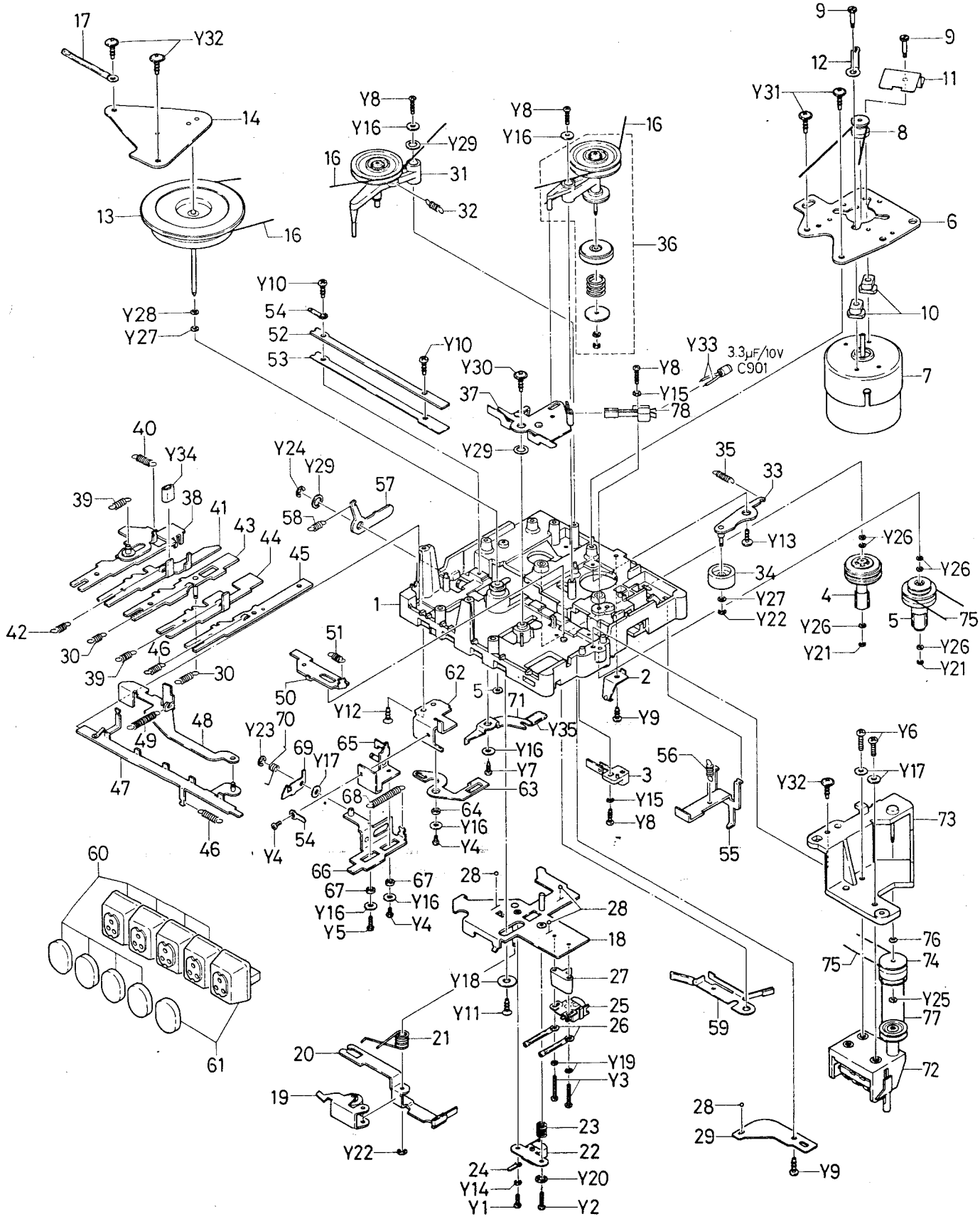
Key No.	Part No.	Description	Q'ty
P.C.B. ASSY (M2422H)			
	4-226T-74591	Printed circuit board assembly	1
		AMP	
S2-1,S2-4	4-231T-46100	Switch, Tape-Radio-Sleep	1
	4-254T-03400	Output ransformer 25 type	1
	4-254T-10900	Input transformer	1
	4-235T-05500	Socket, MIC AUX EXT. SP	3
	4-235R-15771	Socket, Remote	1
	123-2-474R-00200	Chip plug	2
	123-2-411R-10900	Plate nut, Remote	1
	4-231T-28400 or 4-231T-21972	Switch, R/P select	1
S8	4-231R-14900	Switch, Beat SW	1
	4-258T-07100	OSC coil	1
	4-252T-04700	Choke coil 100μH	1
	123-2-472R-00400	Lug, VR earth	1
VR701	4-222T-40900	Variable resistor 10KA, VOLUME	1
VR702	4-222T-40800 or	Variable resistor 10KA with SW, TONE	1
VR701	4-222T-46500	Variable resistor 10KA, VOLUME	1
VR702	4-222T-46600	Variable resistor 10KA with SW, TONE	1
Q701		Transistor 2SC644	1
Q702,703, 704		Transistor 2SC945	3
Q705,706,		Transistor 2SD400	2
Q707		Transistor 2SB187	1
D701,702		Diode MA-26	2
D703		Diode DS-131	1
D704		Diode DS-132 D	1
		CAPACITORS	
C707,708		Electrolytic 0.1μF 10WV	2
C701		Electrolytic 0.15μF 10WV	1
C702		Electrolytic 0.22μF 10WV	1
C706		Electrolytic 0.33μF 10WV	1
C731		Electrolytic 0.47μF 10WV	1
C703,709		Electrolytic 1μF 25WV	2
C735		Electrolytic 2.2μF 25WV	1
C728		Electrolytic 33μF 25WV, Low temperature	1
C704,717		Electrolytic 220μF 6.3WV	2
C718		Electrolytic 220μF 10WV	1
C712		Electrolytic 470μF 6.3WV	1
C713		Electrolytic 470μF 10WV	1
C719		Electrolytic 1000μF 10WV	1
C726		Mylar 0.0033μF ±20% 50WV	1
C714,715		Mylar 0.015μF ±20% 50WV	2
C727		Mylar 0.022μF ±20% 50WV	1
C736		Mylar 0.033μF ±20% 50WV	1
C730		Ceramic 150pF ±20% 50WV	1
C705		Ceramic 220pF ±20% 50WV	1
C734		Ceramic 390pF ±20% 50WV	1
C711		Ceramic 0.001μF ±20% 50WV	1
C725		Ceramic 0.0015μF ±10% 50WV	1
C720,721, 737,738		Ceramic 0.022μF +80 −20% 50WV	4
		RESISTORS	
R724		Winding wire 0.22 ohm ±10% 1/2W	1
R718		Carbon 3.3 ohm ±10% 1/4W	1
R726		Carbon or Solid 8.2 ohm ±10% 1/2W	1
R737		Carbon 10 ohm ±10% 1/4W	1
R723		Carbon 33 ohm ±10% 1/4W	1
R719		Carbon 56 ohm ±10% 1/4W	1
R725		Carbon 68 ohm ±10% 1/4W	1
R707		Carbon 82 ohm ±10% 1/4W	1
R717		Carbon 120 ohm ±10% 1/4W	1
R742		Carbon 220 ohm ±10% 1/4W	1
R721		Carbon 330 ohm ±10% 1/4W	1
R741		Carbon 620 ohm ±5% 1/4W	1
R738		Carbon 180 ohm ±10% 1/4W	1
R702		Carbon 680 ohm ±10% 1/4W	1
R701,708, 716,722, 731		Carbon 1K ohm ±10% 1/4W	5

Key. No.	Part No.	Description	Q'ty
P.C.B. ASSY (M2422H)			
R730		Carbon 1.8K ohm ±10% 1/4W	1
R711		Carbon 2.7K ohm ±10% 1/4W	1
R709		Carbon 3.9K ohm ±10% 1/4W	1
R712,720		Carbon 5.6K ohm ±10% 1/4W	2
R736		Carbon 6.8K ohm ±10% 1/4W	1
R706,729		Carbon 10K ohm ±10% 1/4W	2
R714		Carbon 12K ohm ±10% 1/4W	1
R735		Carbon 22K ohm ±10% 1/4W	1
R715		Carbon 33K ohm ±10% 1/4W	1
R710		Carbon 47K ohm ±10% 1/4W	1
R728		Carbon 180K ohm ±10% 1/4W	1
R739		Carbon 220K ohm ±10% 1/4W	1
R713		Carbon 680K ohm ±10% 1/4W	1
R705		Carbon 1.5M ohm ±10% 1/4W	1
		TUNER	
L103a,103b	4-257T-12001	Antenna coil assembly	1
L104	4-257R-26930	Antenna coil, SW2	1
VC-1,2	4-224T-04800	Variable capacitor 335pF	1
	4-224R-20700	Variable capacitor, Fine tuning	1
L105	4-258T-10200	OSC coil, SW2	1
L107	4-258T-07600	OSC coil, SW1	1
L108	4-258T-05600	OSC coil, MW	1
L106	4-265R-10600	VHF coil	1
L102	4-255R-10700	RF choke coil 15μH	1
T301,302	4-256T-04140	I.F.T.	2
T303	4-256T-03740	I.F.T.	1
CT-1,2	4-224R-01400	Variable capacitor 8pF	2
B101	123-2-471R-10400	Core	1
S1	4-231T-41271	Slide switch, BAND select	1
	123-2-445R-00200	Cushion, VC mtg.	1
		Pan head screw 2.6 x 4mm, VC mtg.	2
	4-257T-12000	Antenna coil 10 x 140mm	1
	141-2-369T-02301	Bracket, Antenna coil mtg.	1
	123-2-474R-00200	Chip plug, Rod antenna	1
	123-2-382R-00291	Terminal, ANT input	1
Q101		Transistor 2SC930, Converter	1
Q301		Transistor 2SC710, I.F.	1
Q302		Transistor 2SC710, I.F.	1
D101,102, 103		Diode DS-442	3
D104,301		Diode 1S188 AM	2
D302		Diode 1S330 A1	1
		CAPACITORS	
C304		Electrolytic 10μF 6.3WV	1
C314		Electrolytic 330μF 6.3WV	1
C118		Styrol 350pF ±10% 125WV	1
C115		Styrol 1400pF ±10% 125WV	1
C109,111		Mylar 0.0022μF ±20% 50WV	2
C112		Mylar 0.0047μF ±20% 50WV	1
C105,107, 108,310, 311		Mylar 0.01μF ±20% 50WV	5
C303		Mylar 0.022μF ±20% 50WV	1
C313		Mylar 0.047μF ±20% 50WV	1
C120		Ceramic 2pF ±0.25pF 50WV	1
C104,302, 307		Ceramic 4pF ±0.5pF 50WV	3
C101,116		Ceramic 5pF ±0.5pF 50WV	2
C113		Ceramic 8pF ±0.5pF 50WV	1
C102,103, 106,110		Ceramic 10pF ±10% 50WV	4
C117		Ceramic 13pF ±10% 50WV	1
C301,305, 308,309		Ceramic 0.022μF +80 −20% 50WV	4
C306		Ceramic 0.0033μF ±20% 50WV	1
		RESISTORS	
R101,111		Carbon 10 ohm ±10% 1/4W	2
R102,107		Carbon 22 ohm ±10% 1/4W	2
R115,312, 112		Carbon 39 ohm ±10% 1/4W	3
R114,302		Carbon 56 ohm ±10% 1/4W	2
R116		Carbon 270 ohm ±10% 1/4W	1
R303		Carbon 390 ohm ±10% 1/4W	1
R106		Carbon 680 ohm ±10% 1/4W	1

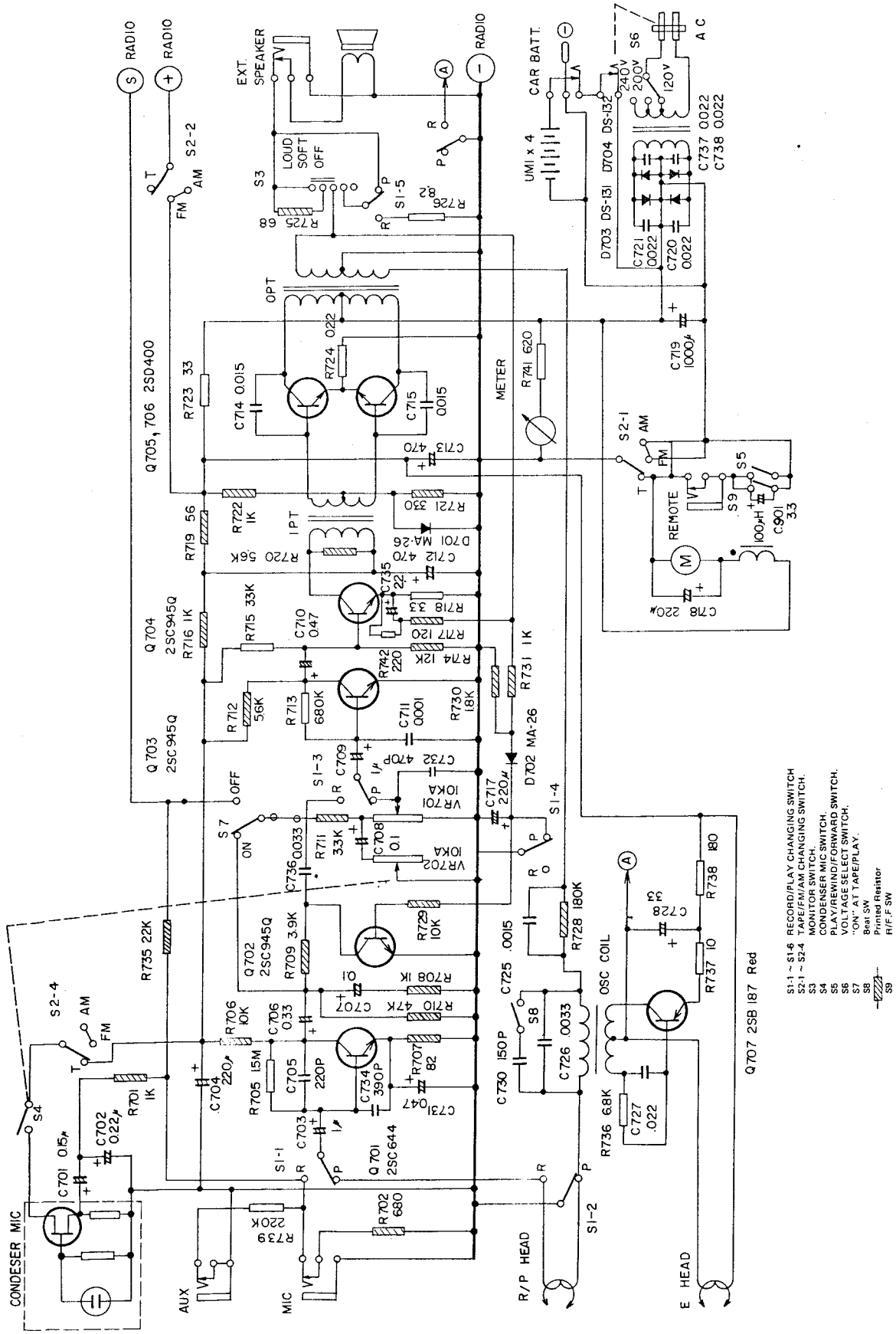
Key No.	Part No.	Description	Q'ty
P.C.B. ASSY (M2422H)			
R307		Carbon 820 ohm ±10% 1/4W	1
R308		Carbon 1K ohm ±10% 1/4W	1
R109		Carbon 1.2K ohm ±10% 1/4W	1
R108		Carbon 1.5K ohm ±10% 1/4W	1
R105		Carbon 1.8K ohm ±10% 1/4W	1
R311		Carbon 2.7K ohm ±10% 1/4W	1
R104,110		Carbon 3.3K ohm ±10% 1/4W	2
R309		Carbon 4.7K ohm ±10% 1/4W	1
R310		Carbon 5.6K ohm ±10% 1/4W	1
R304,305		Carbon 10K ohm ±10% 1/4W	2
R117		Carbon 18K ohm ±10% 1/4W	1
R306		Carbon 22K ohm ±10% 1/4W	1
R103		Carbon 27K ohm ±10% 1/4W	1
R301		Carbon 47K ohm ±10% 1/4W	1
R313		Carbon 100K ohm ±10% 1/4W	1
R113		Carbon 120K ohm ±10% 1/4W	1
R118		Carbon 180K ohm ±10% 1/4W	1
MECHANISM			
1	141-0-311T-11699	Chassis assembly	1
2	141-2-853T-23400	Plate spring, Cassette pressure	1
3	4-231T-35002	Power supply switch	1
4	141-0-531T-04100	Reel plate assembly, Take up reel	1
5	141-0-531T-01700	Reel plate assembly	1
6	141-0-378T-054991	Bracket assembly	1
7	4-527T-05800	DC motor	1
8	141-0-661T-66191	Pulley assembly	1
9	141-2-421T-13000	Special screw, Motor mtg.	2
10	141-2-445T-11801	Cushion ring, Motor mtg.	2
11	141-2-322T-19200	Shield plate, Motor	1
12	141-2-472T-03700	Lug, Shield plate mtg.	1
13	141-0-521T-02700	Flywheel assembly	1
14	141-0-524T-05599	Bracket flywheel assembly	1
15	141-2-457T-04300	Special washer, Flywheel bearing mtg.	1
16	141-2-564T-12100	Main belt	1
17	141-2-472T-01000	Lug	1
18	141-0-731T-06200	Slide assembly	1
19	141-0-545T-00700	Pinch roller lever assembly	1
20	141-0-721T-027991	Lever shut off assembly	1
21	141-2-852T-09400	Wire spring, Lever (19) pressure	1
22	4-242T-18800	R/P head	1
23	141-2-851T-49700	Coil spring, R/P head adjust	1
24	123-2-472R-00200	Lug, R/P head earth	1
25	4-242T-18900	E head	1
26	141-2-472T-02200	Lug, E head lead retainer	2
27	141-2-461T-17200	Pipe, E head stand	1
28		Steel ball 2φ, Head slide mtg.	4
29	141-2-853T-38500	Plate spring, Head slide fixer	1
30	141-2-851T-63100	Coil spring, Head slide to Play side	1
31	141-0-741T-14200	Lever assembly	1
32	141-2-851T-56400	Coil spring, Lever (31) returning	1
33	141-0-741T-05700	Lever assembly	1
34	141-2-661T-17400	Pulley, Relay	1
35	141-2-851T-68000	Coil spring, Lever (31) returning	1
36	141-0-741T-14300	Lever assembly, REW & FWD	1
37	141-0-741T-12700	Lever assembly, REW & FWD operation	1
38	141-0-731T-10100	Slide assembly	1
39	141-2-851T-73500	Coil spring, STOP slide returning	1
40	141-2-851T-61100	Coil spring, Lever (38) returning	1
41	141-2-731T-20601	Slide, F.FWD	1
42	141-2-851T-58700	Coil spring, F.FWD slide returning	1
43	141-0-731T-00501	Slide assembly, PLAY	1
30	141-2-851T-63100	Coil spring, Play slide returning	1
44	141-2-731T-20401	Slide, REW	1
45	141-2-731T-23001	Slide, REC	1
46	141-2-851T-63900	Coil spring, REC slide returning	1
47	141-0-731T-00604	Slide assembly	1
46	141-2-851T-63900	Coil spring, Lock slide returning	1
48	141-2-741T-47304	Lever, Kick lever	1
49	141-2-851T-66400	Coil spring, Lever (48) returning	1
50	141-2-731T-20800	Slide, Prevent simultaneously lock	1
51	141-2-851T-56100	Coil spring, Slide (50) returning	1
52	141-2-737T-03200	Bracket, Push button slide fixer	1
53	141-2-737T-03400	Bracket, Push button slide fixer	1
54	123-2-472R-00400	Lug, Earth lead retainer	1
55	141-2-741T-61000	Lever, Prevent a miss recording	1
56	141-2-851T-45400	Coil spring, Lever (55) returning	1

Key No.	Part No.	Description	Q'ty
MECHANISM			
57	141-2-741T-47800	Lever, Cassette up	1
58	141-2-851T-56100	Coil spring, Lever (57) returning	1
59	141-2-741T-47799	Lever assembly	1
60	141-0-161T-18191	Push button assembly	4
61	141-0-161T-181911	Push button assembly, REC	1
62	141-2-737T-03000	Bracket, PAUSE slide	1
63	141-0-741T-12500	Lever assembly, PAUSE	1
64	141-2-683T-21900	Ring, Lever (64) mtg.	1
65	141-0-737T-00100	Bracket slide assembly, PAUSE	1
66	141-0-731T-07800	Slide assembly, PAUSE button	1
67	141-2-683T-24000	Ring, Slide (66) guide	2
68	141-2-851T-55400	Coil spring, Slide (66) returning	1
69	141-2-671T-04300	Cam, PAUSE lock	1
70	141-2-852T-26100	Wire spring, Cam	1
71	141-2-741T-61500	Lever, PAUSE	1
72	141-2-811T-02000	Tape counter	1
73	141-2-812T-05200	Bracket, Counter mtg.	1
74	141-2-661T-17100	Pulley, Counter relay	1
75	141-2-564T-08401	Square belt, Reel plate to Relay pulley	1
76	141-2-457T-04100	Special washer, Pulley mtg.	1
77	141-2-564T-14900	Square belt, Counter to Relay pulley	1
78	4-231T-25400	Switch, REW & F.FWD	1
MECHANISM SCREW			
Y1		Pan head screw 2 x 6mm	1
Y2		Pan head screw 2 x 8mm	1
Y3		Pan head screw 2 x 12mm	1
Y4		Pan head screw 2.6 x 4mm	3
Y5		Pan head screw 2.6 x8mm	1
Y6		Pan head screw 3 x 8mm	2
Y7		Tapping screw 2.3 x 4mm	1
Y8		Tapping screw 2.3 x 8mm	4
Y9		Tapping screw 3 x 6mm	2
Y10		Tapping screw 3 x 8mm	2
Y11		Flat head tapping screw 3 x 6mm	1
Y12		Flat head tapping screw 3 x 8mm	1
Y13		Binding head tapping screw 3 x 6mm	1
Y14		Washer 2 x 4.3 x 0.4mm	1
Y15		Washer 2.6 x 5 x 0.5mm	2
Y16		Washer 2.6 x 7.5 x 0.5mm	5
Y17		Washer 3 x 8 x 0.5mm	3
Y18		Washer 4 x 10 x 0.8mm	1
Y19		Spring washer 2mm	5
Y20		Internal tooth lock washer 2.6mm	1
Y21		External "E" ring 1.5mm	2
Y22		External "E" ring 2mm	2
Y23		External "E" ring 2.3mm	1
Y24		External "E" ring 3mm	1
Y25		Graphite nylon washer 2 x 4 x 0.25mm	1
Y26		Graphite nylon washer 2 x 4 x 0.5mm	6
Y27		Graphite nylon washer 2.6 x 4.7 x 0.25mm	2
Y28		Graphite nylon washer 2.6 x 4.7 x 0.5mm	2
Y29		Graphite nylon washer 5.2 x 8 x 0.5mm	1
Y30		Tapping screw with washer 3 x 6mm	1
Y31		Tapping screw with washer 3 x 8mm	2
Y32		Tapping screw with washer 3 x 10mm	3
Y33		Contraction tube 0.7 x 15mm	2
Y34		UL tube 6 x 10mm	1
Y35		Contraction tube 3 x 8mm	1

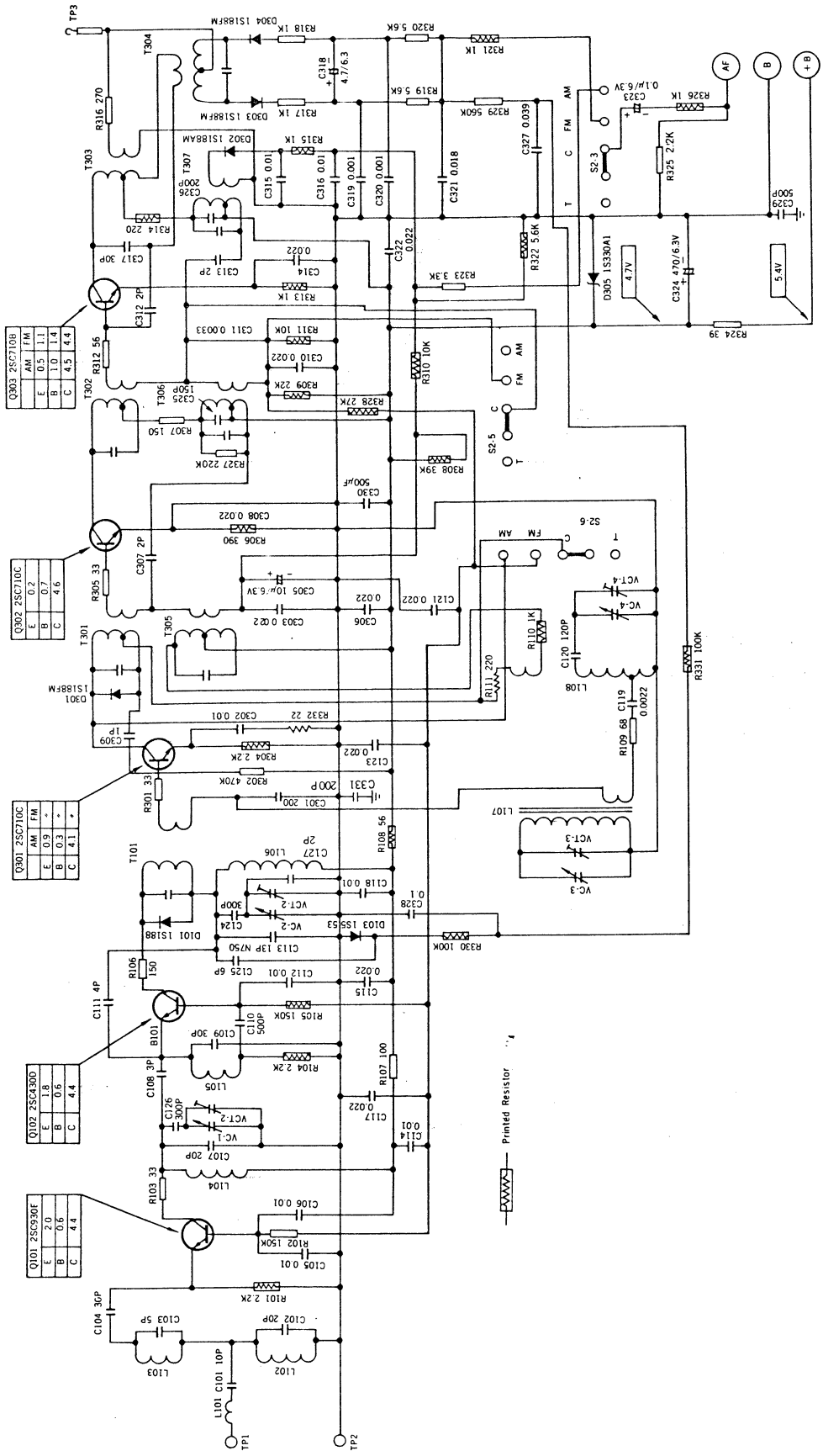
EXPLODED VIEW



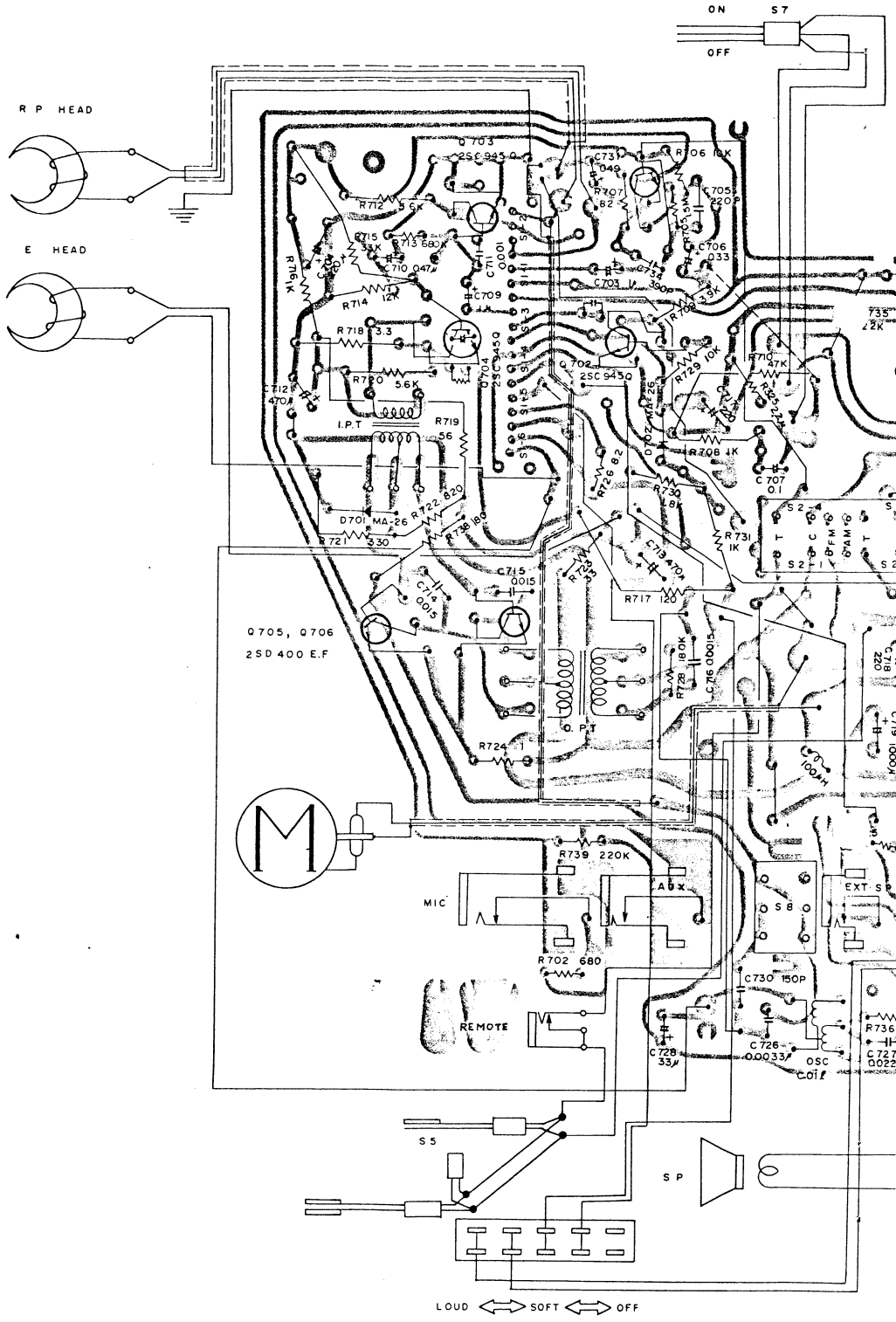
SCHEMATIC DIAGRAM (M2422F AMPLIFIER)

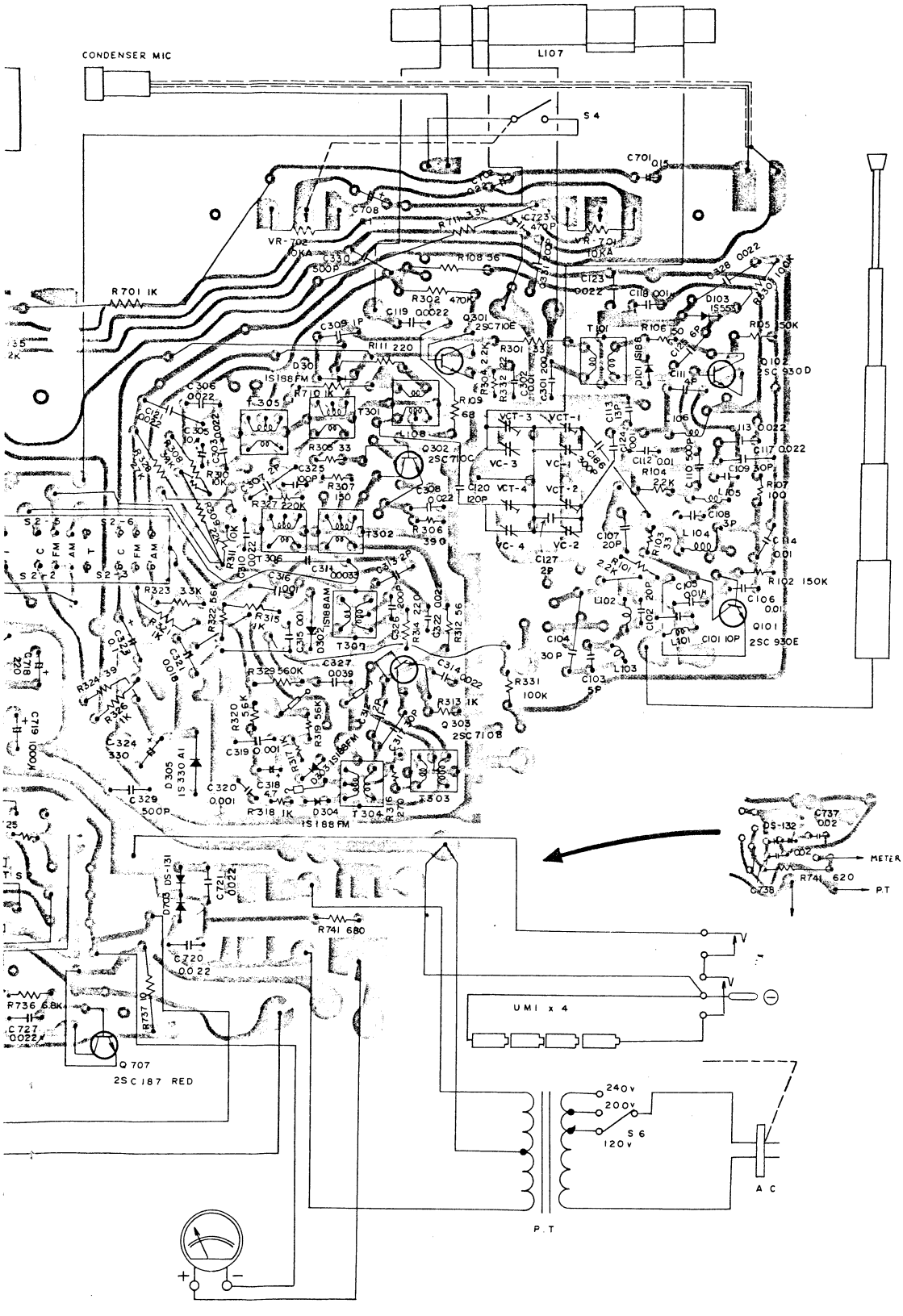


SCHEMATIC DIAGRAM (M2422F TUNER)



WIRING DIAGRAM (M2422F)




CONDENSER MIC
L107
S4
C701 015
VR-702 10KA
VR-701 10KA
R701 1K
R111 220
R109 68
R105 150K
R106 150
R107 100
R102 150K
R103 33
R104 22K
C111 5P
C112 001
C113 13P
C114 001
C115 5P
C116 20P
C117 0022
C118 001
C119 0022
C120 120P
C123 0022
C127 2P
C128 0022
C129 0022
C301 220P
C302 0022
C303 0022
C304 0022
C305 0022
C306 0022
C307 0022
C308 0022
C309 1P
C310 0022
C311 0022
C312 0022
C313 0022
C314 0022
C316 0022
C317 0022
C318 4.7
C319 0.001
C320 0.001
C321 0.001
C322 0022
C324 330
C325 100P
C326 0.001
C327 0039
C329 500P
C330 500P
R301 33
R302 470K
R303 220K
R304 2.2K
R305 33
R306 390
R307 150
R308 10K
R309 10K
R310 10K
R311 10K
R312 56
R313 1K
R314 220
R315 1K
R316 270
R317 1K
R318 1K
R320 56K
R322 56K
R323 3.3K
R324 39
R325 1K
R326 1K
R327 220K
R329 560K
R331 100K
R332 2.2K
T301
T302
T303
T304
T305
T306
T307
T308
D101 1S188
D102 2SC 930D
D103 1S554
D301 1S188FM
D302 1S188AM
D303 1S188FM
D304 1S188FM
D305 IS 330 A1
Q101 2SC 930E
Q301 2SC710E
Q302 2SC710C
Q303 2SC710B
L101
L102
L103
L104
L105
L108
VC-1
VC-2
VC-3
VC-4
VCT-1
VCT-2
VCT-3
VCT-4
S2-1 FM AM
S2-2 FM AM
S2-3 FM AM
S2-6 FM AM
C719 1000M
C720 0.22
C721 0022
C727 0022
R736 6.8K
R737 10
R741 680
Q707 2SC187 RED
DS-131
DS-132
C737 002
002
R741 620
0.38
METER
P.T
UM1 x 4
240v
200v
S6
120v
A C
P.T